



OFFICE OF THE CITY AUDITOR COLORADO SPRINGS, COLORADO

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20-20 Colorado Springs Utilities Advanced Meter Infrastructure Program

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Purpose

To monitor the implementation of the multi-year capital program known as AMI (Advanced Meter Infrastructure) and its associated projects. Both the technical implementation and the effective use of project management concepts and tools were evaluated. The period for this report was 2019.

Highlights

We conclude the Advanced Meter Infrastructure (AMI) Program could benefit from a more robust use of program and project management structure. Four observations have been identified. See details beginning on page 2.

AMI is a multi-year program planned to be completed in 2023 for a total cost of approximately \$109 million. The AMI program consists of distinct projects managed by the Advanced Utilities Technology (AUT), Customer Service Division (CSD), and Information Technology (IT) groups. For the AMI program to be successful, all of the associated projects must be coordinated and delivered on schedule.

The AMI Program consists of these projects:

- ◆ AMI Metering Systems managed by AUT
- ◆ Meter Data Management (MDM) managed by CSD
- ◆ Critical Technology Infrastructure (CTI) managed by IT
- ◆ Analytics Platform (AP) and Cross Functional Reporting (CFR) managed by IT.

The projects for AMI include upgrades or replacement of existing technology from the meters at all customer locations through to the billing system. During the audit period, key contracts were signed, initial systems development was started, testing was conducted, training plans were created, and multiple workshops were held to prepare detailed requirements.

Deployment of new meters and a new network to deliver meter data to the Utilities network is referred to as the AMI Metering System project. Meter data will be

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Management Response

Management was generally in agreement with our recommendations. See responses beginning on page 2

Recommendations

1. Develop controls in the procurement and accounting processes to prevent future projects from continuing beyond a reasonable change management period when there are known issues.
2. Adopt a program management framework for the AMI program and assign roles.
3. Develop a project review process that includes hard gate criteria that would encourage project managers and sponsors to carefully consider canceling or stopping a project that is not meeting its goals.
4. Notify the City Attorney's Office of all changes made to the standard contract templates. The City Attorney's Office should review professional services agreements prior to execution to ensure consistency and to ensure Utilities' interests are protected.

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processed through the Meter Data Management (MDM) application on its way to the billing system. The MDM project has undergone multiple changes since it was initiated. MDM and AMI Metering System require upgrades or new implementations of infrastructure within the Utilities network, which will be delivered by the IT projects CTI, AP and CFR.

The first meters will be deployed beginning in October 2020 with full deployment commencing in January 2021. Cost data as of April 30, 2020 is shown below. Due to the COVID pandemic, changes in capital project timing may impact actual deployment plans. We would like to thank all of the Utilities staff that have assisted with this audit.

AMI Program Cost								
(\$000's)								
Project Name	2018	2019	2020	2021	2022	2023	2024	Total
AMI Project - Metering System	48	40	4,176	20,495	20,496	17,413	19,140	81,808
MDM Project	1,686	3,559	4,658	40	-	-	-	9,943
IT Projects - CTI/AP/CFR	-	2,847	4,551	2,341	2,419	2,554	2,633	17,345
Total AMI Program Costs	1,734	6,446	13,385	22,876	22,915	19,967	21,773	109,096

Actual cost through April 30, 2020. Forecasted May 2020 through 2024.

Observation 1

For the MDM project, a contract was executed for a systems integration firm. Significant deficiencies were noted with the scope of work shortly after the contract was executed. When the scope of a contract needs to be changed, procurement policies dictate the work must be re-solicited. Attempts to negotiate an amended Statement of Work (SOW) were unsuccessful. The systems integrator contract was restructured to conclude in September 2019 and another firm was hired to complete the remaining work. During the negotiation period, work continued on this project without the benefit of a signed SOW or contract amendment to support a change to payment terms.

\$1.972 million, or approximately 1/2 of the total contract value, was paid out without a corresponding SOW or accurate payment terms. The total cost to complete the work using both system integrators and minor contracted labor is expected to be \$8.454 million.

Recommendation

Utilities Senior Management should develop controls in the procurement and accounting processes that would prevent future projects from continuing beyond a reasonable change management period when there are known issues with the contracting documents, project scope, deliverables, schedule, budget or payment terms. Consider improvements to enforce re-solicitation of services when a scope change is necessary.

Management Response

We agree with the observation and recommendation. We have initiated a review of our Procurement policy and procedures to ensure that we have properly defined, developed, communicated and trained on controls in the procurement and accounting processes that would prevent future projects from continuing beyond a reasonable change management period when there are known issues with the contracting documents, project scope, deliverables, schedule, budget or payment terms. In addition, through this review process we will evaluate and amend the policy language for when a re-solicitation of services is needed when there is a scope change. The actions noted above are targeted to be completed by Dec 31st, 2021.

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Observation 2

While some recent improvements have been noted, during the audit period, program level management roles and responsibilities were not assigned. No one was assigned to serve as the designated Program Manager. Program level tools were not being utilized to manage the scope, schedule and budget in a cohesive manner. When program level management is weak, decision making and integration of the associated projects may be more difficult. Risks to successful completion of the program increase when there is a lack of program level oversight and issue resolution.

For AMI, there were notable difficulties in:

- creating a consolidated schedule, which would help the various teams to visualize resource conflicts;
- disagreement regarding specific requirements and outcomes at the program level caused delays in decision making; and
- reporting total Program Costs for all projects on a consistent basis.

Management Response

We partially agree with the observation (and/or) the recommendation. Over the course of this audit period (Q3 2018 to Q2 2020), our combined Utilities teams were required to tackle some significant tasks that questioned how far to extend the limits of a programmatic approach for leadership, decision-making and reporting. These are not as clearly stated in the audit finding. The SPP Division was managing the AMI deployment for the deployment period 2020 to 2023. The CSD teams were providing the technology upgrades to support the AMI deployment, and maintain the ongoing technology upgrades. This technology upgrade of MDM, CTI and other systems are extensive for the first meter deployment in late 2020. Following this period, the AMI deployment is coordinating with the CSD teams. The positions listed of Sponsor/Senior Responsible Owner (SRO); Program manager (PgM), Business Change Manager (BCM) and Program Management Office (PgMO) are identified as follows:

Sponsor/Senior Responsible Owner (SRO) – Joint owners – CSD and SPP Officers

Program manager (PgM) – for the AMI deployment only. The leads of AUT, IT and CSD are coordinating together their interconnection

Business Change Manager (BCM) and Program Management Office (PgMO) – is for the AMI deployment only and is part of AUT

We agree with ensuring a programmatic approach for our future smart utility programs moving forward, with designated responsibilities. During the course of the audit, there was “confusion and inability to make decisions among participants” that are strategic to align the successful delivery of the benefits. We agree with the lack of coordinated tools to consolidated and integrate reporting and management.

With that we are progressing a Smart Utility Program Charter and recruiting a Program Manager position to support the organization in an improvement in this programmatic approach for future smart utility that cross multiple disciplines.

Recommendation

Utilities Senior Management should adopt a program management framework for the AMI program. Program roles and responsibilities should be clearly defined and have sufficient resources assigned, including a designated Program Manager. Program benefits and outcomes should be agreed to by Senior Management to inform technical requirements planning by the associated projects.

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Observation 3

The decision to replace the system integrator for MDM was delayed 10 months after management became aware there were serious concerns with the contract. The project manager and project sponsor attempted to mitigate the problems but were unsuccessful.

The project manager's main responsibility is to make their project a success; however, they also must clearly articulate the risks and benefits of stopping a project if it is not meeting its goals. One method to prevent projects from continuing when there are serious risks to a successful outcome is the use of hard decision gates with predefined criteria. If a project cannot demonstrate it has met the requirements of each decision gate, it is not allowed to continue. Hard gates can be used to prevent further funding for a project that should be stopped.

Recommendation

Utilities Senior Management should consider developing a project review process that includes hard gate criteria that would encourage project managers and sponsors to carefully consider canceling or stopping a project that is not meeting its goals.

Management Response

We agree with the recommendation. As identified in Observation 2 we intend to implement a programmatic approach for future smart utility projects that cross multiple disciplines, are interdependent and require this level of coordination.

Observation 4

Several issues were noted in the system integrator contract for MDM even though it was drafted based on the standard contract template. Conflicting payment terms were seen between the contract and the SOW. An exhibit that was specified in the contract was not executed, non-standard payment language was used in the SOW, and there was no order of precedence to provide guidance on which terms would prevail if there were a conflict. Some negotiated changes to standard clauses were favorable to the contractor upon termination.

The City Attorney's Office was engaged in the approval of the standard contract and during negotiations, however they were not responsible for a final review of all contract changes prior to execution.

Recommendation

Procurement should notify the City Attorney's Office of all changes made to the standard contract templates, especially when changes may create conflicts with other terms or with associated exhibits. The City Attorney's Office should review professional services agreements prior to execution to ensure consistency and to ensure Utilities' interests are protected.

Management Response

We agree with the observation and recommendation. We have initiated a review of our Procurement policy and procedures to ensure that we have properly defined, developed, communicated and trained on controls in the procurement processes to ensure that Procurement notifies the City Attorney's Office of all changes made to the standard contract templates, especially when changes may create conflicts with other terms or with associated exhibits. The City Attorney's Office will review professional services agreements prior to execution to ensure consistency and to ensure Utilities interests are protected. The actions noted above are targeted to be completed by Dec 31st, 2021.